HIS 450 Long Bed User's Manual

Introduction

Thank you for purchasing your HighCountry spray system. We have designed your system to be trouble free and low maintenance for many years to come. It is our intention that you now have one of the most productive tools in your equipment arsenal. Please take a short time to familiarize yourself with this manual and observe the cautions included to assure safe and productive operation.

Thank you for joining our family of HIS system users.

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Section 1 -Installation & Setup

If your system was delivered to your dealer, then skip this paragraph. If your system came on a pallet, cut the black hold down bands on the spray system skid, and remove the box of accessories. Unpack the box. Put the boom off to the side where it won't fall or get damaged. Using a forklift, small crane, or 4 strong men pick up the system to allow the front legs to unfold from their position tucked up under the frame. Put clip pins in to keep front legs from folding back up. Then install the back legs using the hitch pins provided.(pic 2) Set the system down on the 4 legs. (pic 1) Recycle the pallet if possible.

Your system is ready to slide into the truck. Back the truck up to the system so the back edge of the bed touches the front legs gently. The front edge of the steel frame should overhang into the bed. If you have a new truck or a bed liner, spray common silicone spray on the bed surface in front of the system frame. This will allow the system frame to slide with minimal scraping of the bed paint or bedliner. Remove the clip pins from the front legs. Pick up the front end of the system by manually lifting and kicking the front legs toward the rear (into fold-up position). With the front of the system resting on the bed of the truck, back the truck up slowly with one person at the rear of the system pushing and wiggling until the system is fully in the bed. Using a tape measurer center the system in the bed side to side. Remove the rear legs and set aside with the clip pins.

Attempt to install the boom from the bottom up into operational position.(pic 4) If it fits easily, use the clip pin to set the height for 22-25 inches off the pavement. If the bumper protrudes so as to block installation of the boom you should shift the skid toward the rear of the truck until the boom clears the bumper or trailer hitch easily. Double check for the skid being well centered left to right in the bed.

Using a 3/4" drill bit, drill two holes through each of the two cross-frame braces on the spray system skid through the brace and through the bed surface of the truck. (pic 5) Some measuring may be necessary to assure you are not drilling into the gas tank or other undesirable objects under the bed surface. Using grade 8 or better bolts, bolt the skid to the bed of the truck using strap steel or very large washers on the bottom side. (pic 6) Repeat for the front mount bolts.

Take the wiring harness and put into the cab. Stretch power adapter (cigarette lighter plug) to a known working power plug and insert. Notice the LED light on the adapter. Position the switch box on the seat. The switch can be attached to a proper place on a cloth seat with velcro for convenient use if desired. Snake the flat cable under the seat and out the passenger door. Assure the flat cable passes thru the door as flat as possible to reduce chance of damage. Route as necessary thru the bed to protect. Connect the 3 wire connector to the matching connector on electric valve. The electric valve has an off/on mark on it. With the ignition on, confirm that the LED light on the adapter is on. Flip the cab control switch to the "on" position. The electric switch in the back should move and the arrow point to the **on** position. Turn the cab control switch to off and confirm the valve moved back to the **off** position. System is now ready to be filled and used.

If desired, a piece of clear bra material can be purchased from an automotive detail shop to protect the truck's paint where the power cable goes thru the door and into the bed.

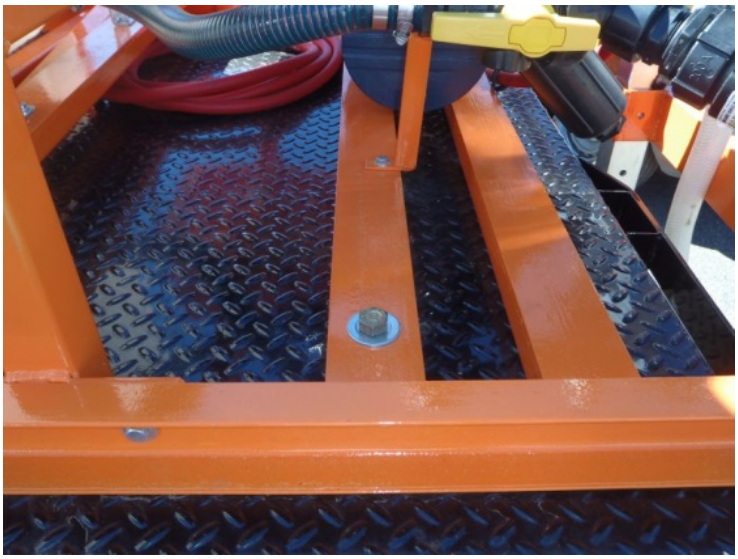
Pic 1- System ready to load into truck.

Pic 2- Back leg detail with hitch pin in place.

Pic #3 has been removed for the 450 gal model.

Pic 4- Boom in “use” position. Boom’s vertical brace should clear the bumper or trailer hitch by at least 3/4”

Pic 5- Typical position for rear mounting bolts on flat bed.



Pic 6 A 1.5 inch square of strap steel acting as a washer under the bed for a main mounting bolt.

Section 2- Use and Care

Part 1- to fill the system from a storage tank

Hook a non-collapsing hose to the storage tank and to the input port on the system. (2" cam-lock fittings) Put the "source" valve in fill position. Put the fill valve into "fill" position.

Source valve in fill position.

Fill valve in fill position

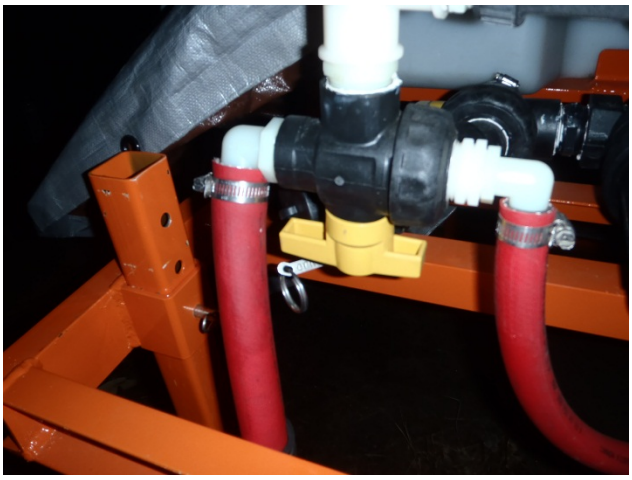
When hose is connected and valves are set, open the valve on the storage tank and start the motor. System tank will fill at a rate of about 40 gallons per minute. When full, shut the motor off, then close the storage tank valve. Then turn the "source" valve to vertical or off position. Remove the hose, and cap off the input port. Return the fill valve to the "off or "use" position.

Part 2- How to use the boom for normal spraying

When on site for a spray job, turn the source valve toward the system tank.

Then turn the output valve to the left position for boom. (Right is for the hose)

Output valve:



Make sure wiring harness is plugged in securely to the 3 wire connector near the pump, and into the cigarette lighter/power port in the truck. Check the LED on the power port plug which should be on to be ready to use. Change the cab control switch to on, and visually verify the valve changed to indicate the ON position. Turn off.

The boom must be in the "use" position and the hose connected like this:

Note- the hose to the boom should be trimmed to a proper length for your truck with boom set 22-25 inches off the pavement.

If your pump has not been used or was drained for off-season, you will need to prime the pump. The priming port is a 4 sided plug vertically mounted near the blue pump.

Remove the plug and pour in a quart to a quart and a half of your chosen chemical or warm water to prime the pump. Then put the plug back in snugly. (This only has to be done when the pump was drained or is brand new)

Then start the motor. Run the engine speed up to a high idle. Open the "fill valve" momentarily (5 seconds)and re-close to circulate the pump. Hold the button on the flow meter to reset the gallons used. Turn on cab control switch until spraying liquid is heard. Observe the pressure gauge. Increase engine speed until gauge reads 35-40 psi. Turn off and position truck for first pass. Note- Valve takes about 1.5-2 seconds to start flow or stop flow after switch is flipped. Adjust driving accordingly.

Spray coverage chart

Low flow spray heads, 6 heads at 1.5 gal per minute(40 psi) is 9 gal/min in a path 8 ft wide

Speed	coverage
12 mph	938 sq ft/gal
10 mph	782 sq ft/gal
7 mph	547 sq ft / gal

You can change your coverage by changing the vehicle speed, or by changing the output pressure through changing the engine speed. If you do not have recommendations from your liquid provider, always start around 1 gal per 900-1000 sq ft. (ie set the throttle on the motor so you have 35 psi and drive as close to 12 mph as possible) Use your measurements of the lot and your flow meter reading to determine sq ft per gallon actually applied.

Section 2- **Use of hose**

To use the hose, either reel equipped version or 25 ft coil, simply turn the output valve to the right, and turn the cab control switch to the “on” position. Then start the motor and use the spray gun like any other spray. Remember to turn the cab control switch off and return the output valve to the “boom” position. (left)

Cautions and reminders*** Important ! Do not overload your truck. (exceed the manufacturers gross vehicle weight rating GVWR) Many deicing/dust control liquids weigh almost 11 lbs per gallon. Your spray system weighs around 680 lbs. Do the math for the product you use and the truck you have.

*Check the tightness on your hold down bolts during the first month of service

*check engine oil frequently during the season. Change oil yearly. Hondas live long with clean oil.

* Do not run the pump for more than 5 minutes without spraying. Pump overheating and damage could occur. Shut the motor off if there is any possibility of being longer than 5 minutes.

*If transporting for longer distances on roads with any liquid (water or chemical) on them, cover the motor and the pump with a tarp. The mist/dust kicked up at highway speeds or on a treated road is hard on the motor.

*** Important ! Do Not attempt to unload spray system from truck with liquid still in system tank. Empty tank, and then remove from truck. Damage to system legs or injury to operators can occur if not empty.

* For safest operation and least risk for boom damage, return boom to the travel position when spraying is done or traveling between jobs involves and significant distance. Assure that clip pin is fully clipped.

Travel position

*At the end of the season empty the system tank, and add 20-30 gallons of water. Flush the system by running the pump with the fill valve in fill position (priming the pump). Then change the valve to use and discharge out both the boom and the hose/ spray gun. Run the pump until no more pressurized

water comes out. Then open the drain plug on the bottom of the pump. This drains the pump chamber itself and most of the system.

*Do not attempt to use this system with powder based chemicals. The recirculation system is not designed to keep powder in suspension. Use liquid based chemicals only. Liquid concentrates are OK.

Please feel free to email or call with any questions. We cannot provide guidance on mix proportions for chemicals or application rates other than ice/dust control. All other questions are welcome.

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See our blog at www.highcountryis1.blogspot.com for general info on anti-icing and dust control spraying.